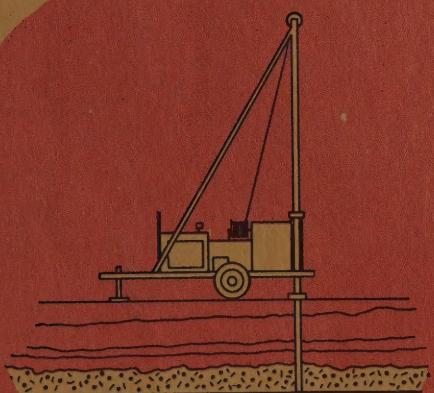
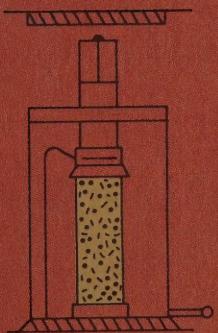
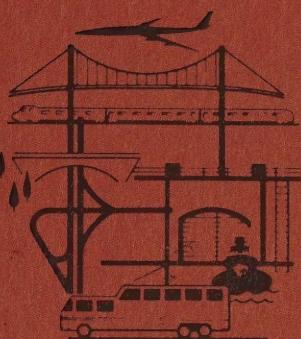


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STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION



**SOIL MECHANICS  
BUREAU**



REPORT OF TELEVISION BOREHOLE SURVEY  
OF WELL NUMBER 3  
Iroquois Service Area  
New York State Thruway

By  
Francis R. Irving  
Associate Engineering Geologist



March 20, 1970

Mr. Belmont H. Williams  
Chief Engineer  
N.Y.S. Thruway Authority  
P.O. Box 189  
ALBANY, NEW YORK 12201  
Albany, New York 12201 MAIL ROOM 3

Project: Well Number 3                      Subject: Television  
Iroquois-Indian Castle Service Area      Borehole Survey  
Project No. E101254-071

In accordance with your request dated January 7, 1970, this Bureau has completed a survey of Well Number 3 with a television borehole camera.

The attached report, prepared by Francis R. Irving, Associate Engineering Geologist, summarizes our findings.

Very truly yours,

W. P. Hofmann, Director  
Bureau of Soil Mechanics

by Liseal H. Sime

**Richard H. Burns**  
**Associate Soils Engineer**

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cc: G. W. McAlpin

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50 Wolf Road, POD 34  
Albany, New York 12232

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March 25, 1968

Mr. Chairman of the  
Senate Select Committee  
on Small Business,  
Mr. Chairman of the House Select  
Committee on Small Business,  
Mr. Chairman of the Senate Select  
Committee on Small Business,  
Mr. Chairman of the House Select  
Committee on Small Business,

Dear Mr. Chairman:

We appreciate your interest in our  
small business. We believe that  
the small business community is  
the backbone of our economy and  
we are pleased to support your efforts.

We are particularly concerned about  
the proposed legislation which would  
allow small business to deduct their  
business expenses as a deduction from  
their personal tax return.

We believe that this proposal would  
be beneficial to small business and  
would encourage more people to start  
their own businesses.

Yours truly,  
John H. Gutfreund  
Chairman, NYSE

John H. Gutfreund  
Chairman, NYSE

John H. Gutfreund  
Chairman, NYSE

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Lipsey  
30 Wall Road, P.O.D. 34  
Albany, New York 12233

REPORT OF TELEVISION BOREHOLE SURVEY  
OF WELL NUMBER 3

Iroquois Service Area  
New York State Thruway

State of New York  
Department of Environmental Conservation  
Division of Water Resources  
New York State Thruway

A television inspection of Well Number 3 at the Iroquois-Indian Castle Service Area was conducted on February 17, 1970, by personnel from the Bureau of Soil Mechanics. The inspection was carried out at the request of Mr. Belmont Williams, Chief Engineer of the New York State Thruway Authority.

REPORT OF TELEVISION BOREHOLE SURVEY

OF WELL NUMBER 3  
Iroquois-Indian Castle Service Area  
New York State Thruway

Sand and silt size particles entering the well have caused excessive wear to the pump so far. Pieces of the well screen, including the label, had been recovered during recent bailer operations. The borehole camera was used in an attempt to determine the condition of the well screen at present.

The recovered label identified the screen as being a Johnson Standard 48 by 12 foot long and eight inch in diameter (7.5 cu. ft.). Francis R. Irving, Associate Engineering Geologist, provided a partial view of a vertical section bar pieces recovered by the bailer. The vertical pieces were almost completely covered by a coating of sand grains cemented on by iron oxide. This coating covered the void areas as well as the ends of the vertical pieces showing that they were not broken loose by the recent bailer operations, but must have lain on the bottom of the well for some time.

The damaged top of the screen is shown in Plates II & III. The brass collar and lead seal are both missing. They are probably in the bottom of the well screen, unless they were recovered in some previous bailer operation. Quite a bit of the horizontal "V" section bar was recovered by the bailer, however, there is approximately 16 feet of this "V" section bar to the inch of screen length. The T.V. inspection showed that the damaged area below the missing collar may be only four inches. There is 3.2 feet of screen at present between the damaged top as shown in Plate II and the bottom (lowest point to which the T.V. probe could penetrate). This means that there is probably 4.3

THEMIS EDITIONS RÉGIONALES VOUS PRESENTE  
LE RECUEIL DE  
POÈME SOUVENIR D'UN CAMP-CHASSEUR  
COMPOSÉ PAR JEAN-PIERRE VILLE

REPORT OF TELEVISION BOREHOLE SURVEY  
OF WELL NUMBER 3

Iroquois Service Area

feet of screen com  
New York State Thruway  
of the top of the well screen  
foot thick, probably no more than eight feet of the original

A television inspection of Well Number 3 at the Iroquois-Indian Castle Service Area was conducted on February 17, 1970, by personnel from the Bureau of Soil Mechanics. The inspection was carried out at the request of Mr. Belmont Williams, Chief Engineer of the New York State Thruway Authority.

Well Number 3 is located at V.B. Centerline Station 3333.36, 88' left. The aquifer is a ten foot gravel layer lying between elevation 287 and 297.

Sand and silt size particles entering the well have caused excessive wear to two pumps so far. Pieces of the well screen, including the label, had been recovered during recent bailing operations. The borehole camera was used in an attempt to determine the condition of the well screen at present.

The recovered label identified the screen as being a Johnson Everdur 40 slot screen, ten feet long and eight inch in diameter (7.5 od, 6.58 id). Plate I shows an external view of a partially restored section of screen made from pieces recovered by the bailer. The vertical pieces were almost completely covered by a coating of sand grains cemented on by iron oxide. This coating covered the weld areas as well as the ends of the vertical pieces showing that they were not broken loose by the recent bailling operations, but must have lain on the bottom of the well for some time.

The damaged top of the screen is shown in Plates II & III. The brass collar and lead seal are both missing. They are probably in the bottom of the well screen, unless they were recovered in some previous bailling operation. Quite a bit of the horizontal "V" section bar was recovered by the bailer, however, there is approximately 16 feet of this "V" section bar to the inch of screen length. The T.V. inspection showed that the damaged area below the missing collar may be only four inches. There is 5.2 feet of screen at present between the damaged top as shown in Plate II and the bottom (lowest point to which the T.V. probe would penetrate). This means that there is probably 4.5+

the number of feet of screen lost are sand grains cemented on to iron oxide. It is felt that they coat the weld areas and ends of the vertical pieces above that these pieces were not broken loose by the last bailling operation.

mathal-sinopori adi ta E tahanil libot ko hontsangak nabiheleset a  
-tag qd ,976 ,VI yunonoi no batasnon ang asan takon aligad  
ang hontsangak adi asinadeti libot ko mawu adi mohi inang  
-tagil hantib ,amiliit tawid .itb no tawar adi ta 200 batasno  
-tawid tawid asan qd adi ko mawu

feet of screen completely filled with sediments, rust and pieces of the top of the well screen. Since the aquifer is only ten feet thick, probably no more than eight feet of the original screen was exposed beneath the casing.

Plates IV & V show the material recovered by the bailer separated according to that passing or being retained by the No. 14 sieve. The coarser material consists mainly of rust particles from the casing. There are a few pieces of sandstone and crystallines too coarse to be passed by the well screen. They may have entered the well between the casing and the screen since the seal is no longer present. Figures 1 and 2 show the grain size analysis of the samples taken by the bailer and from the softening wire respectively. Over 90% by weight of the material in both samples could pass a No. 40 well screen. Over 90% of the remaining material is rust particles from inside the casing.

There were also two pieces larger than 1/4", the larger one being 1.5 in. x 2 in. These pieces were reportedly recovered by the bailer in the latest cleaning operation. The T.V. examination did not disclose any openings large enough to permit passage of pieces this large. They may have entered the well accidentally from the top or there may be more extensive damage to the screen below the area that could be examined by the radial view T.V. camera.

The static water level in the well at the time of the survey was 102.5 feet below the top of the casing.

*Francis R. Irving*

Francis R. Irving  
Associate Engineering Geologist

Unconstructed segment of 40 slot  
well screen (exterior view).

These pieces were recovered by the bailer at Well No. 3 at Iroquois Service Area. The encrustations visible at the uncleaned ends of the vertical struts are sand grains cemented on by iron oxide. The fact that they coat the weld areas and ends of the vertical pieces shows that

These pieces were not broken loose by the last bailing operation





Plate I Enlargement of reconstructed segment of 40 slot Johnson well screen (exterior view).

These pieces were recovered by the bailer at Well No. 3 at Iroquois Service Area. The encrustations visible at the uncleaned ends of the vertical struts are sand grains cemented on by iron oxide. The fact that they coat the weld areas and ends of the vertical pieces shows that these pieces were not broken loose by the last bailing operation





Plate II View showing damage at top of well screen.  
Continuation of Plate IV.

The two pieces in the upper left are vertical members which have been bent over. The wide spots on the horizontal member that winds across the center of the picture are weld marks. The brass collar to which the vertical members were attached and the lead seal are apparently missing.



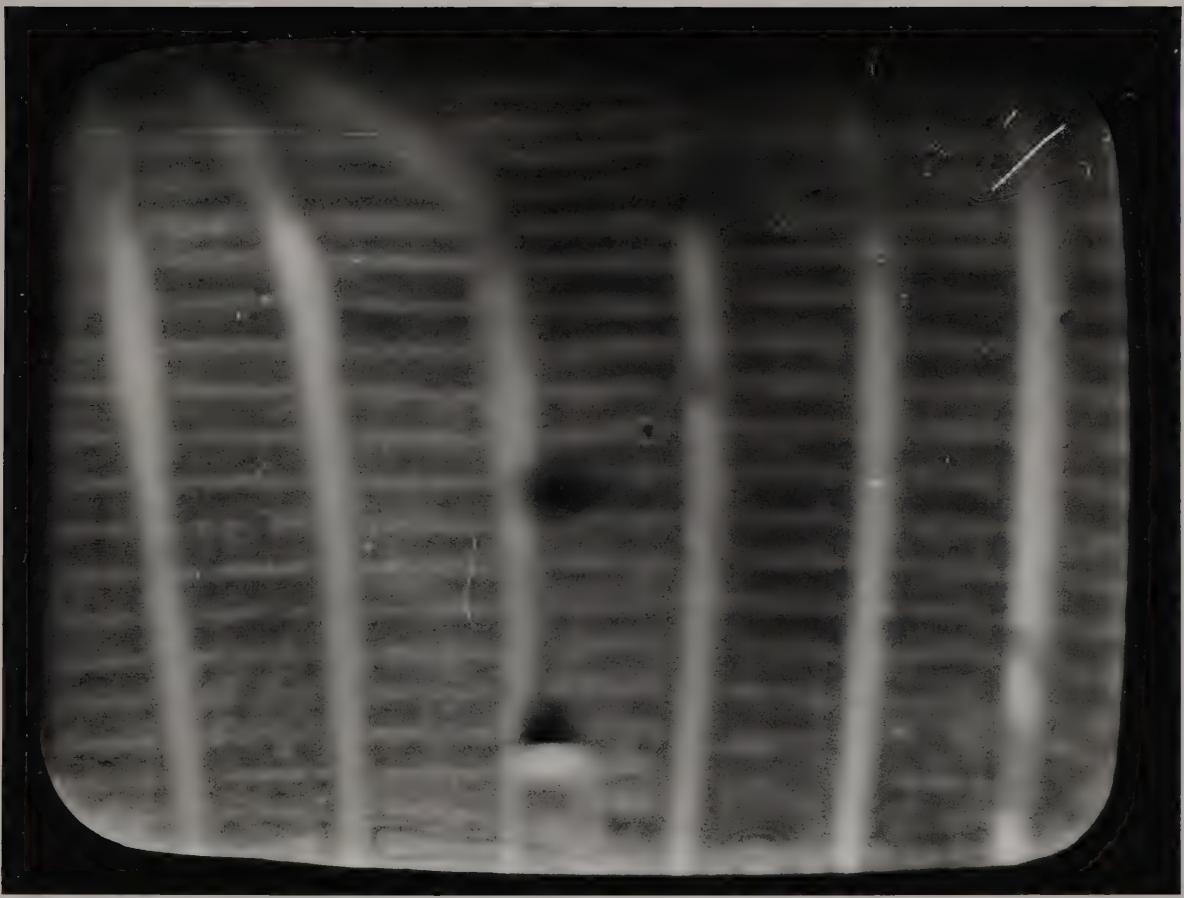


Plate III View showing well screen at base of damaged area.

The section of the screen that could be examined with the radial view T.V. probe showed no damage below this point.





Plate IV Enlarged view of material retained by  
No. 14 sieve. Sample taken by bailer.

Most of the material shown is iron oxide. The  
 $\frac{3}{8}$  in. pebble in the lower left is sandstone.



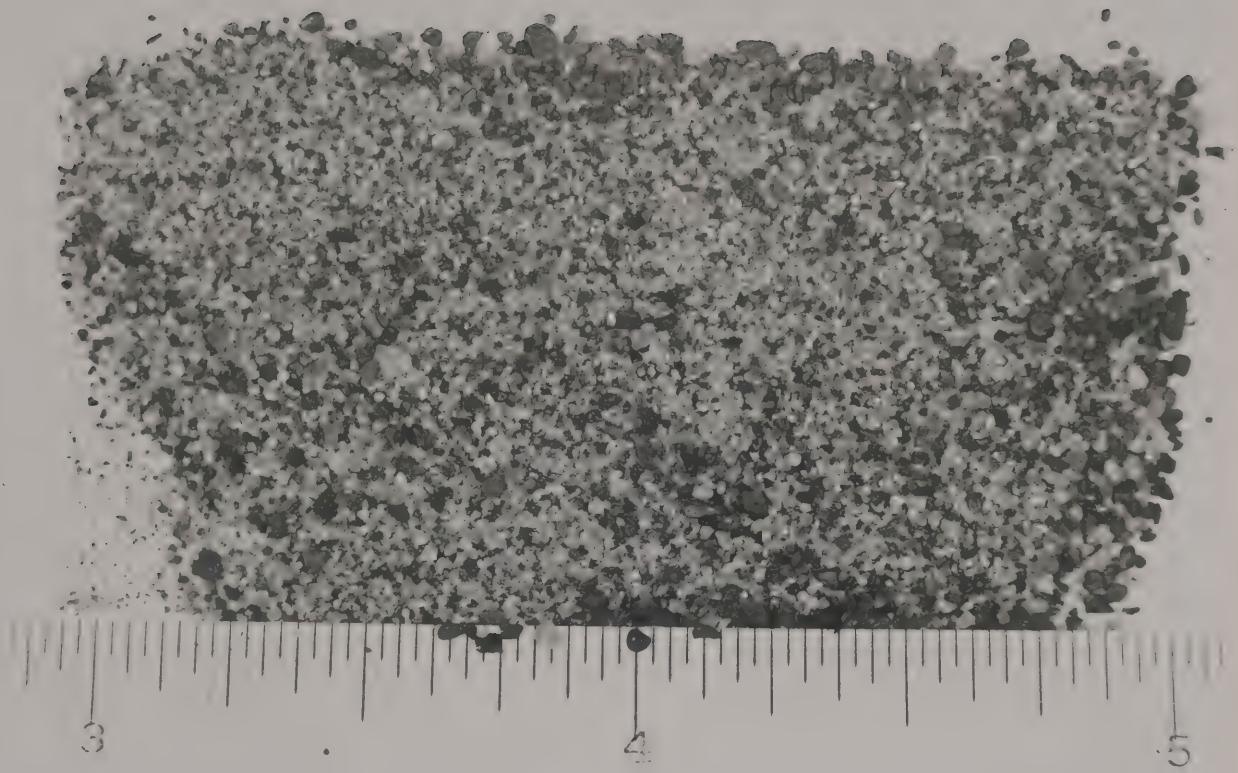
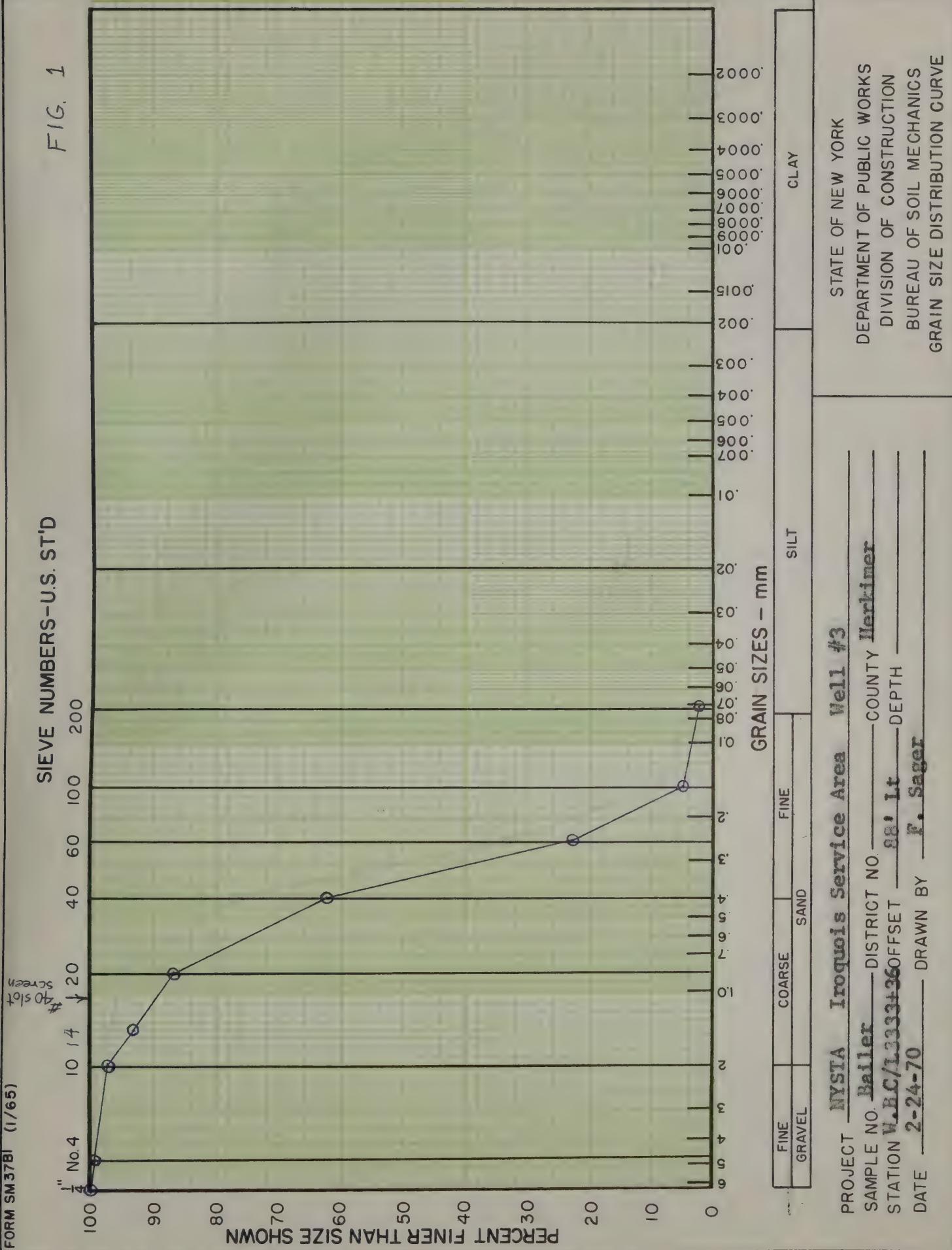


Plate V Enlarged view of material that passes the  
No. 14 sieve. Sample taken by bailer.



## SIEVE NUMBERS-U.S. STD

FIG. 1



FINE GRAVEL	COARSE SAND	FINE SILT	CLAY
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PROJECT Iroquois Service Area Well #3  
 SAMPLE NO. Bailler DISTRICT NO. — COUNTY Herkimer  
 STATION W.B.C/13333+36 OFFSET 88' LT. — DEPTH —  
 DATE 2-24-70 DRAWN BY F. Sager

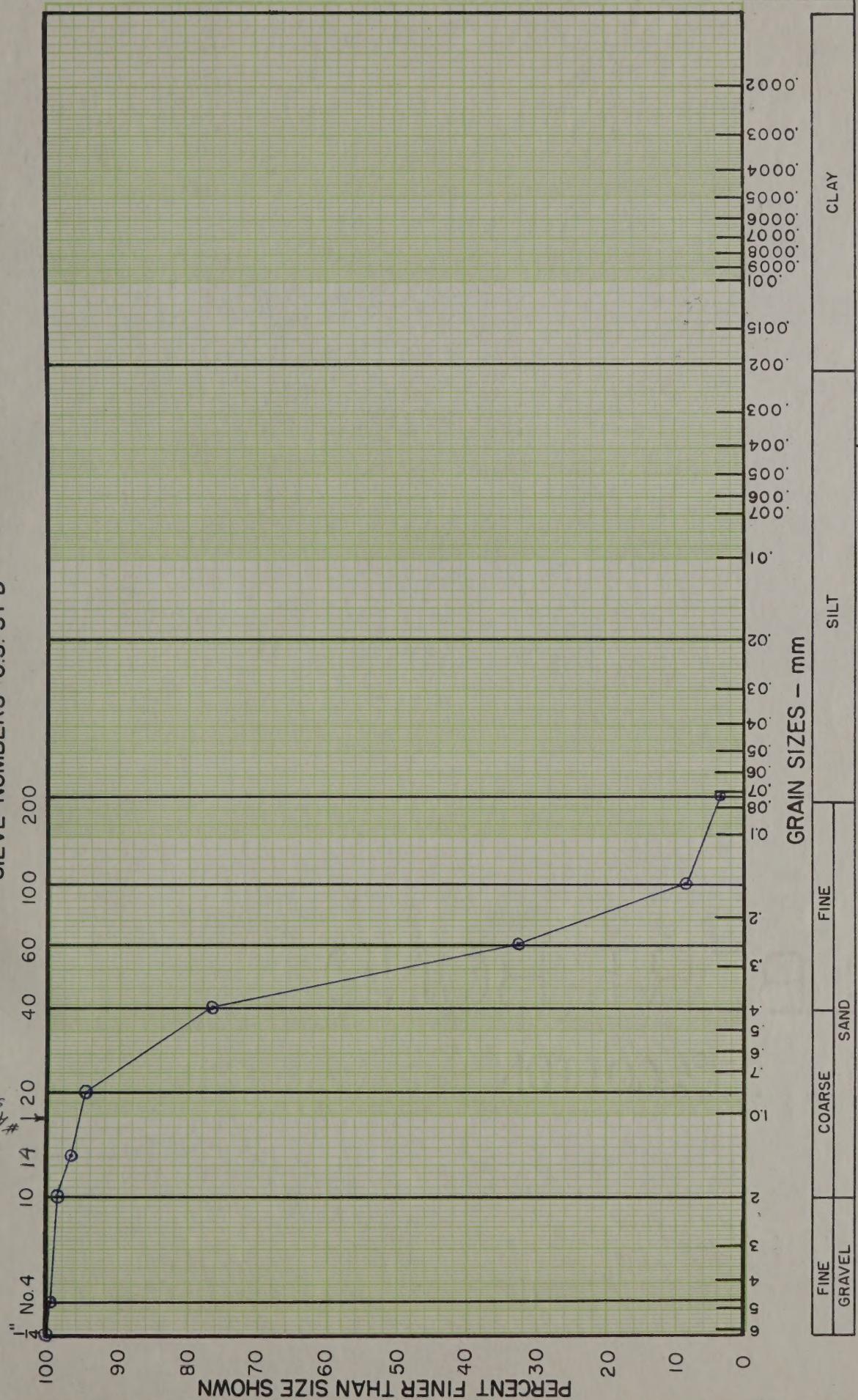
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 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF CONSTRUCTION  
 BUREAU OF SOIL MECHANICS  
 GRAIN SIZE DISTRIBUTION CURVE



SIEVE NUMBERS-U.S. ST'D

FIG. 2

#40 SIEVE



CLAY

SILT

FINE

SAND

COARSE

GRAVEL

STATE OF NEW YORK  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF CONSTRUCTION  
 BUREAU OF SOIL MECHANICS  
 GRAIN SIZE DISTRIBUTION CURVE

PROJECT Iroquois Service Area Well #3SAMPLE NO. Soilerner DISTRICT NO. 88 COUNTY HerkimerSTATION N.B.C/L 3333+36 OFFSET Lt DEPTH  DATE 2-24-70 DRAWN BY F. Sager





